

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A method of ~~providing vascular therapy to~~ treating cardiac failure in a human or veterinary patient ~~who is in cardiac failure resulting in subnormal cardiac output~~, said method comprising the steps of:

a) cooling the patient's heart to a temperature that is at least 1°C below normothermia; and,

b) maintaining the temperature of the patient's heart at least 1°C below normothermia for a sufficient period of time to provide improved cardiac output.

Claims 2-15 (cancelled)

Claim 16 (new) The method of claim 1 wherein steps a and b are carried out at least in part by i) inserting a cooling catheter into the patient's vasculature, said cooling catheter having a heat exchange region and a core, said heat exchange region thermally coupled to said core, the cooling catheter being positioned within the patient's vasculature such that the heat exchange region is positioned in the lumen of a blood vessel, the inner diameter of the blood vessel lumen being larger than the outer diameter of said heat exchange region, and ii) exchanging heat between blood flowing past said heat exchange region and said heat exchange region for sufficient time to cool the patient's heart tissue to a temperature at least 1°C less than normothermia.

Claim 17 (new) The method of claim 16 wherein the heat exchange region of the cooling catheter comprises a heat exchange balloon through which a heat exchange fluid is circulated.

Claim 18 (new) The method of claim 17 wherein the heat exchange balloon comprises a plurality of balloon lobes disposed in a generally helical configuration.

Claim 19 (new) the method of claim 17 wherein said core comprises flowing heat exchange fluid.

Claim 23 (new) The method of claim 16 wherein the cooling catheter is positioned such that its heat exchange region is in the inferior vena cava of the patient.

Claim 24 (new) The method of claim 16 wherein steps a and b are carried out by circulating heat exchange fluid through an external heat exchanger to alter or maintain the temperature of said heat exchange fluid and through the catheter core to exchange heat between the heat exchange fluid and the patient's circulating blood.

Claim 25 (new) The method of claim 1 wherein the patient's heart is cooled to a temperature below 35.5°C.

Claim 26 (new) The method of claim 1 wherein an anti-shivering treatment is administered to prevent the patient from shivering.

Claim 27 (new) The method of claim 26 wherein the anti-shivering treatment includes one or more of the anti-shivering mechanisms selected from the group consisting of:

- a) a warming blanket;
- b) busparone
- c) meperidine; and
- d) dexamedetomidine

Claim 28 (new) The method of claim 1 wherein the patient's heart is cooled for a period of at least three hours.

Claim 29 (new) The method of claim 1 wherein the method is performed to stabilize the patient's condition prior to performance of an interventional medical procedure or surgery.

Claim 30 (new) The method of claim 1 wherein the method is performed to treat a patient with mild cardiac failure.

Claim 31 (new) The method of claim 1 wherein the method is performed to treat a patient with late stage chronic congestive heart failure.

Claim 32 (new) The method of claim 1 wherein the method is performed to treat a patient with post operative cardiac failure.

Claim 33 (new) The method of claim 1 further comprising the step of:

d) placing a temperature probe in or on the patient to sense the temperature of part of a patient and to generate a temperature signal based on said sensed temperature, and controlling the patient temperature based on said temperature signal.

Claim 34 (new) The method of claim 1 wherein step b comprises maintaining the patient's heart at a temperature at or below 36° C. for at least ½ hour.